

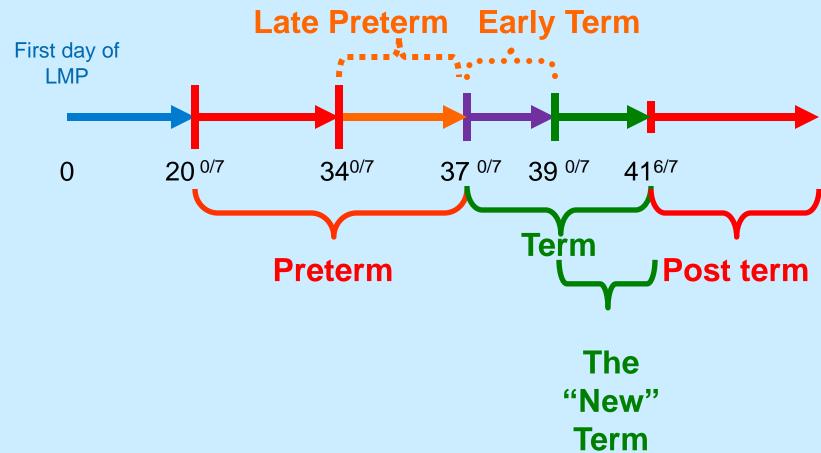
Ellie Hogenson, MD, FACOG and Jacqueline Collins, RN, BSN Fairbanks Memorial Hospital

Fairbanks Memorial Hospital Initiative to Decrease Elective Early Term Deliveries

- Discussion of the problem of early term elective deliveries (Deliveries at less than 39 weeks)
 - Complications occurring with elective deliveries <39 weeks
 - Scope of the problem

Description of the Initiative at Fairbanks Memorial Hospital

Terminology



Modified from Drawing courtesy of William Engle, MD, Indiana University

Raju TNK. Pediatrics, 2006;118 1207. Oshiro BT Obstet Gynecol 2009;113:804

Current ACOG Guidelines for assessing Fetal Maturity

- Current guidelines for Assessing Fetal Maturity (ACOG Practice Bulletin #97; August 2008)
 - Fetal heart tones have been documented for 20 weeks by nonelectronic fetoscope or for 30 weeks by Doppler
 - It has been 36 weeks since a positive serum or urine human chorionic gonadotropin pregnancy test was performed by a reliable laboratory.
 - Ultrasound measurement at less than 20 weeks of gestation supports gestational age of 39 weeks or greater
 - Amniocentesis and documentation of fetal maturity

Current ACOG Guidelines for assessing fetal maturity

- Current guidelines for Assessing Fetal Maturity (ACOG Prac Bull #97; August 2008)
 - Ultrasonography may be considered to confirm menstrual dates if there is a gestational age agreement within 1 week by crown– rump measurements obtained in the first trimester
 - An ultrasound obtained in the second trimester at up to 20 weeks by multiple biometeric parameters confirms the gestational age of at least 39 weeks within 10 days.

Scheduled Delivery <39 wks in an Uncomplicated Pregnancy

- Since 1979, ACOG has cautioned against inductions before 39 weeks in the absence of a medical indication (Committee Opinion #22)
- ACOG has also noted that "a mature fetal lung maturity test result before 39 weeks of gestation, in the absence of appropriate clinical circumstances, is not an indication for delivery".

(Committee Practice Bulletins #97 and #107)

Risks of Non-medically Indicated Delivery Before 39 weeks

Complications of Elective Deliveries Between 37 and 39 Weeks

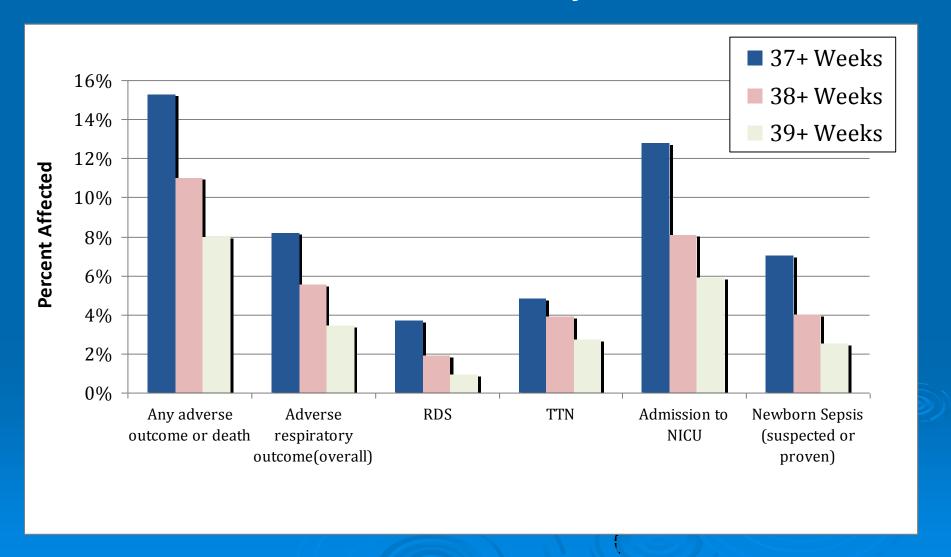
- Increased NICU admissions
- Increased transient tachypnea of the newborn (TTN)
- Increased respiratory distress syndrome (RDS)
- Increased ventilator support
- Increased suspected or proven sepsis
- Increased newborn feeding problems and other transition issues

Complications of Early Term Elective Deliveries

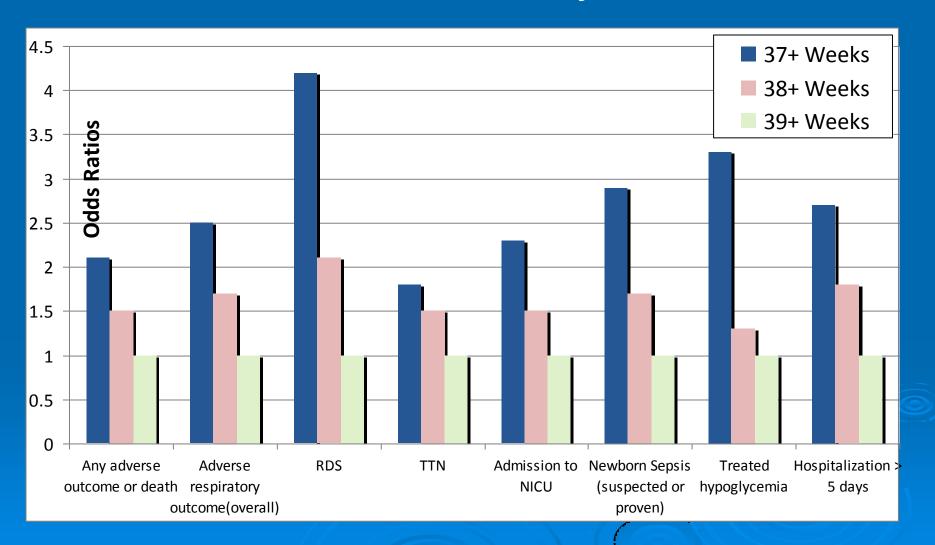
Study by NICHD in the New England Journal of Medicine in 2009

13,258 Elective C-Sections at 19 facilities

Adverse Neonatal Outcomes According to Completed Week of Gestation at Delivery: Absolute Risk



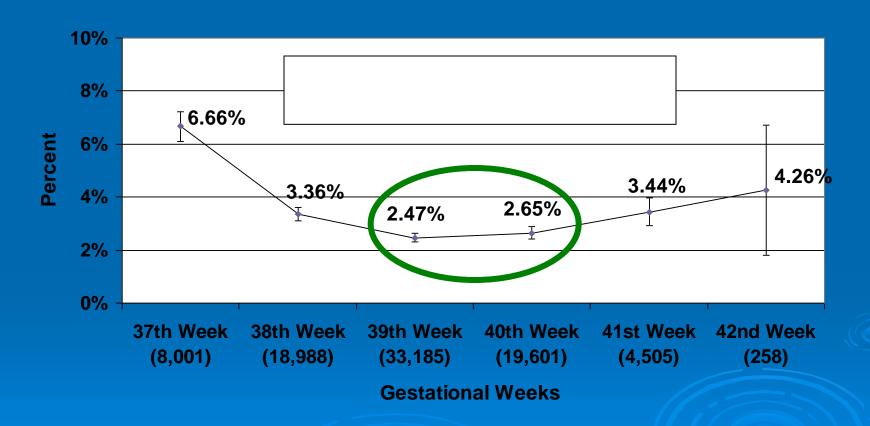
Adverse Neonatal Outcomes According to Completed Week of Gestation at Delivery: Odds Ratios



Concept: U-Shaped Curve for near-term Neonatal Outcomes

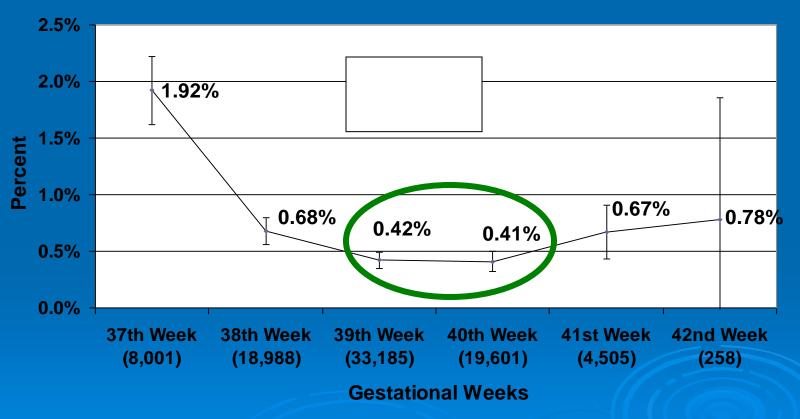
- Neonatal outcomes at 37 and 38 weeks are very similar (or worse) than those at 41 and 42 weeks...
- > Best outcomes are at 39 and 40 weeks!

NICU Admissions By Weeks Gestation Deliveries Without Complications, 2000-2003





RDS By Weeks Gestation Deliveries Without Complications, 2000-2003



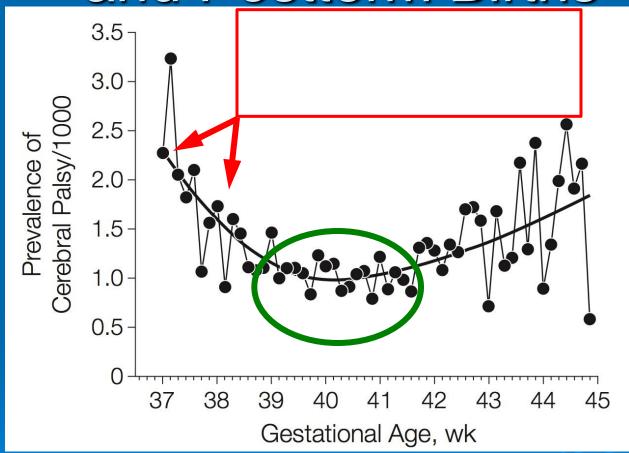


Timing of Fetal Brain Development

- Cortex volume increases by 50% between 34 and 40 weeks gestation. (Adams Chapman, 2008)
- Brain volume increases at rate of 15 mL/week between 29 and 41 weeks gestation.
- A 5-fold increase in myelinated white matter occurs between 35-41 wks gestation.
- Frontal lobes are the last to develop, therefore the most vulnerable.

(Huttenloher, 1984; Yakavlev, Lecours, 1967; Schade, 1961; Volpe, 2001).

Cerebral Palsy among Term and Postterm Births



Norwegian birth cohort of 1,682,441 singleton term births without congenital anomalies followed for a minimum of 4 years (maximum of 20 years) with identified CP in the National Health Insurance Registry.

Moster et al. JAMA 2010;304:976-982.

Extent of the Problem

Extent of the Problem, US Data

NICHD Study:

- 35.8% less than 39 weeks
 - 29.5% at 38 wks
 - 6.3% at 37 wks

Extent of the Problem

More likely to be delivered at less than 39 weeks if:

- Older
- Non-Hispanic White
- Married
- Non LGA fetus
- Private Insurance

Not traditional risks for early delivery – supporting patient and provider preference for early term delivery

Reasons given for elective deliveries <39 weeks

- Maternal discomfort
 - Excess edema, backache, indigestion, insomnia (pressure from patients)
- Suspected LGA
- Scheduling (pressure from providers and patients.)

- History of rapid labor/ lives far away
- Belief in possible lower risk for mom or baby
 - Lower stillbirth rate, less preeclampsia
 - Prior labor complication

(providers not familiar with new data)

Extent of the Problem, Alaska

State of Alaska Epidemiology



Bulletin

Department of Health and Social Services William J Streur, Commissioner

3601 C Street, Suite 540 Anchorage, AK 99503

http://www.epi.Alaska.gov

Division of Public Health

Ward B Hurlburt, MD, MPH, CMO/Director

Local (907) 269-8000 24 Hour Emergency 1-800-478-0084 Editors:

Joe McLaughlin, MD, MPH Louisa Castrodale, DVM, MPH

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Non-medically Indicated Early Term Deliveries in Alaska, 2005–2010

Background

Non-medically indicated (NMI)-early term (37 to 38 completed weeks gestation) labor inductions and cesarean sections (c-sections) are increasing in the United States, creating concern about trends in current obstetric practice. Alaska has seen an increase in early term births from a low of 15.4% of all singleton births in 1980 to a high of 27.0% in 2005. In 2010, the proportion of early term singleton births in Alaska was 24.7%. An unknown portion of these were elective deliveries, i.e., an induction or c-section was done without a documented medical or obstetrical indication.

NMI-early term deliveries are associated with neonatal morbidities with no medical benefit to the mother or infant.² Important organ growth, including the brain, lungs, and liver, occurs during the last weeks of pregnancy.³ Morbidities associated with NMI-early term births include respiratory complications, sepsis, hypoglycemia, transient tachypnea of the newborn (TTN), and respiratory distress syndrome (RDS).⁴⁻⁷ The risks are highest for elective c-sections at 37 weeks gestation.⁴⁻⁷ These adverse outcomes lead to a higher likelihood of admission to the neonatal intensive care unit,⁴⁻⁷ resulting in significant increases in hospitalization costs.

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Methods

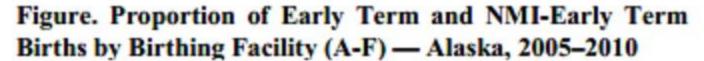
Discussion

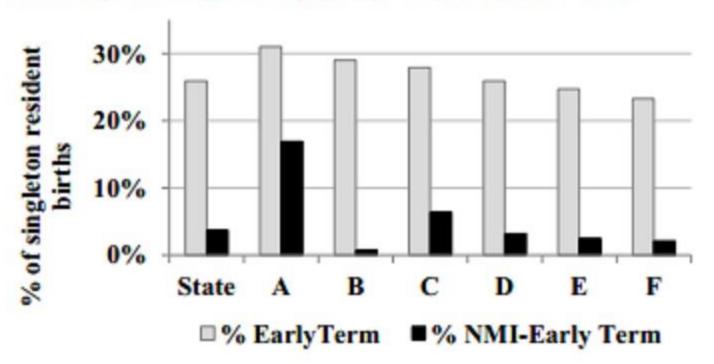
This evaluation demonstrates that 2010 Medicaid-matched NMI-early term births were associated with higher medical costs than NMO-full term births. This is likely due, in part, to the fact that a larger proportion of NMI-early term births were repeat c-sections, compared to the NMO-full term births. Reasons for this include the following: failed early-term elective inductions result in c-sections and many elective repeat c-sections are scheduled prior to 39 weeks.

These findings demonstrate an opportunity to improve hospital standards regarding NMI-early term deliveries. One option is for hospitals to prohibit NMI-early term elective deliveries. Hospital B, which showed the lowest proportion of NMI-early term births (Figure), has implemented this policy. Eliminating NMI-early term elective deliveries could reduce neonatal (and potentially post-neonatal) complications. Such a change would likely reduce neonatal and post-neonatal morbidities and reduce medical costs.

This report is subject to at least one limitation: since we used the absence of birth certificate documentation of "medical indication" as a proxy for an "elective" delivery, we might have overestimated the number of NMI births as some birth certificates might have lacked appropriate documentation.

Extent of the Problem, Alaska





Extent of the Problem, Alaska

- ➤ 25.9% of births were early term and 3.7% were Non-Medically Indicated (elective)-early term
- Wide difference between facilities:
 - Elective deliveries <39 weeks ranged from 0.7% of births to 16.9% of births

Solutions

Eliminating Non-Medically Indicated (Elective) Delivery Prior to 39 Weeks At Fairbanks Memorial Hospital



Clinician and/or Patient Desire to Schedule a Non-medically Indicated (Elective) Induction or Cesarean Section

Clinician, Staff & Patient Education

Reduce

Demand

Public Awareness Campaign

Elective Delivery Hospital Policy



Induction / Cesarean Scheduling Process

Physician Leadership

- A. Enforce policy
- B. Approve exceptions

Case NOT
Scheduled
if Criteria
Not Met

QI Data Collection & Trend Charts

First Steps (Fundamentals)

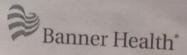
- Gather baseline data of < 39wk scheduled deliveries and outcomes</p>
- Implement list of "approved" indications
 - Have departmental criteria for making certain diagnoses (e.g. hypertensive complications of pregnancy)
 - Identify strong medical leadership to handle "appeals" for exceptions
 - This list DOES NOT imply that all folks with these diagnoses SHOULD be delivered before 39 weeks
- Implement criteria for establishing gestational age >39 weeks

Approved indications for delivery prior to 39 weeks

bruptio Placentae	Isoimmunization	
Antiphospholipid syndrome	Multiple gestation (twins, triplets, etc)	
Chorioamnionitis	Oligohydramnios	
Chronic hypertension	Preeclampsia/eclampsia	
Chronic pulmonary disease	Premature rupture of membranes	
Diabetes mellitus, (poorly controlled)	Renal disease	
Fetal anomalies	fetal growth restriction	
Fetal Demise or History of fetal demise	Classic or inverted T uterine scar	
Gestational Hypertension	Placenta Previa	
Cholestasis of pregnancy		

A mature fetal lung test result before 39 weeks of gestation, in the absence of appropriate clinical circumstances, is not an indication for delivery."

Source: ACOG Bulletin 107, Aug. 2009; Approved by OB Clinical Consensus April, 2011



"Hard Stop"

Hard Stop

All cases <u>not meeting criteria</u> need pre-approval by Dept Chair or designee <u>before scheduling</u>

Key "Needs"

Administration buy-in

Critical to avoid the nurses becoming "police"

Medical leadership will make or break the implementation

Regular review of data

To ensure success of the program moving forward

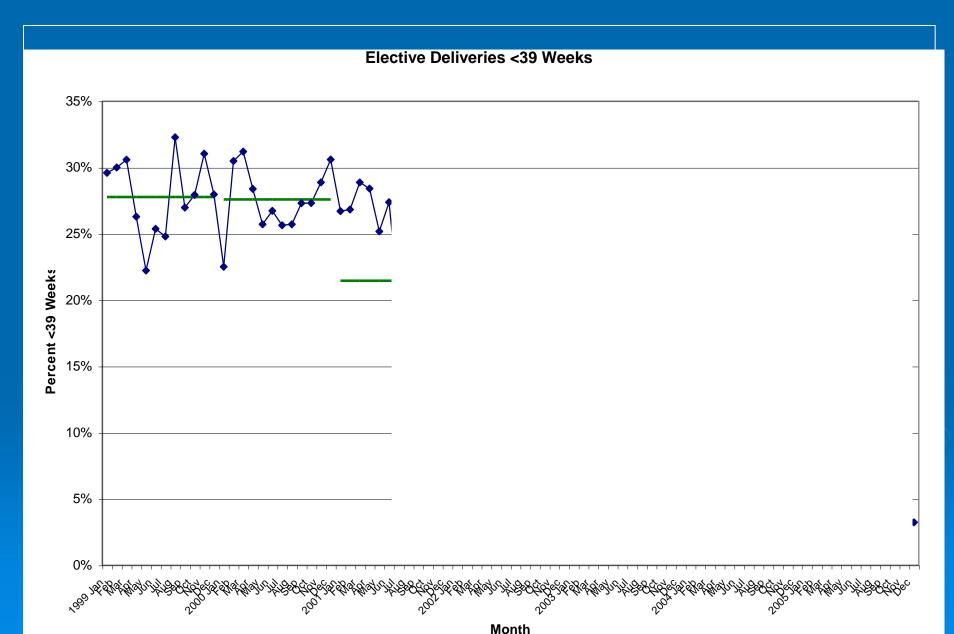
Does It Work?

Ohio Perinatal Collaborative

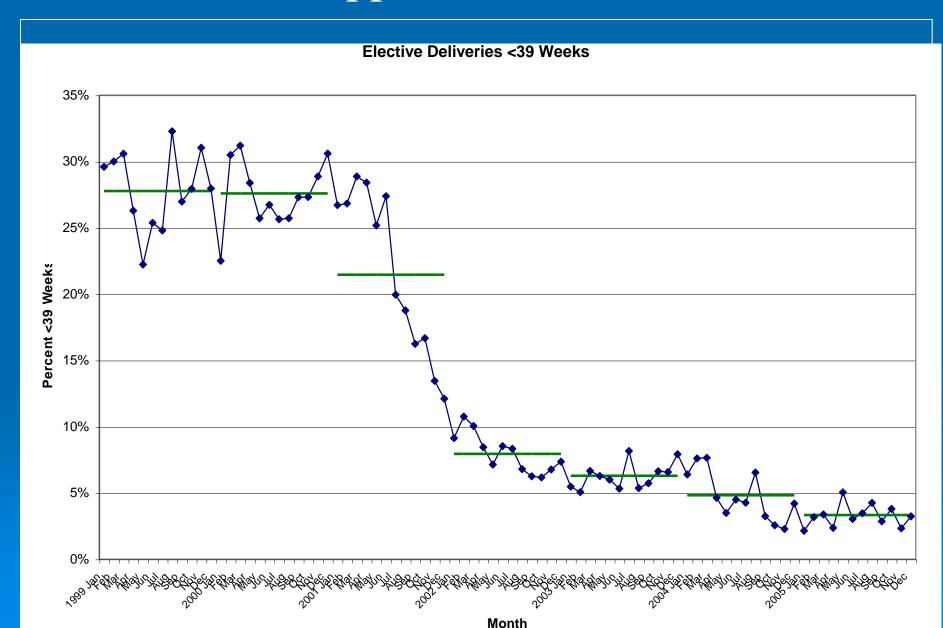
reduced inappropriate early term deliveries prior to 39 weeks from 25% to <5%.



What was for select hospitals in Ohio:



And what happened after intervention:



At Fairbanks Memorial

How many babies were electively delivered prior to 39 weeks?

2010	2011	2012
(Random sample of 103 babies)	(Random sample of 100 babies)	(100% of Jan-Dec)
		0
(13/103)	(1/100)	(0/1122)

Early Term Deliveries: A problem with a solution

- Data is consistent that there are adverse consequences for neonates with elective deliveries prior to 39 weeks.
- "Hard Stop" policies that do not allow scheduling of elective inductions or Csections by hospital staff can be very effective at preventing deliveries < 39 weeks gestational age.

Early Term Deliveries: Progress throughout Alaska

- 9 hospitals in Alaska with deliveries > 150 per year: Providence, ANMC, Bartlett, Ketchikan, Kodiak, Central Peninsula, Yukon Koskokwim, Fairbanks Memorial, Alaska Regional
- 7 of 9 have implemented "hard stop" policies to prevent scheduling of inductions and C-sections before 39 weeks without documentation of gestational age, or medical indication

Thank You!



Questions?

Jackie Collins jackie.collins@bannerhealth.com

Ellie Hogenson hogenson@gmail.com